IN THE CLAIMS:

Please amend Claims 1, 11, 14, 15, 17, 25, 27, 38, 49, 51, 62, and 63, as follows:

1. (Currently amended) A method of generating a pixel image, the image being formed by rendering and compositing a plurality of graphical objects according to an expression tree representing a compositing expression for the image, the expression tree comprising a plurality of nodes each representing one of the objects or an operation for combining objects or results of other operations, each of the objects comprising a predetermined outline and one or more attributes associated therewith, said method comprising the steps of:

for at least one object node, forming one or more mutually exclusive regions, each of the mutually exclusive regions being defined by a region outline substantially following at least part of the predetermined outline ~~outlines~~ of the object, each of the region outlines being formed from horizontal and vertical segments of a virtual grid encompassing a space in which the predetermined outlines are defined, the virtual grid comprising a plurality of cells, each cell comprising a plurality of pixels both horizontally and vertically there within, wherein each of the mutually exclusive regions has ~~have~~ one or more attributes associated therewith depending on the attributes associated with the object;

for at least one operation node, forming a plurality of further mutually exclusive regions, each of the further mutually exclusive regions being formed from the horizontal and vertical segments corresponding to the mutually exclusive regions of one or more object nodes associated with the operation node, each of the further mutually exclusive regions having one or more further attributes associated therewith, wherein the value of at least one of the further attributes is dependent on the values of the attributes associated with a plurality of the

mutually exclusive regions of the one or more object nodes, and wherein one or more of the attributes associated with the plurality of mutually exclusive regions is unused in determining the value of the at least one further attribute, thereby optimizing the determination of the at least one further attribute; and

for at least one of the further mutually exclusive regions, determining pixel data from the further attributes associated with the at least one further mutually exclusive region in order to generate the image.

2. (Previously Presented) A method according to claim 1, wherein the one or more attributes is any one or more of color, opacity and object outline.

3. (Previously Presented) A method according to claim 1, wherein said step of forming a plurality of further mutually exclusive regions includes applying set operations to the mutually exclusive regions.

4. (Previously Presented) A method according to claim 3, wherein the set operations include difference and/or intersection operations.

5. (Previously Presented) A method according claim 1, wherein the virtual grid is regularly spaced.

6. (Previously Presented) A method according to claim 1, wherein the virtual grid is irregularly spaced.

Claims 7 and 8 (Cancelled).

9. (Previously Presented) A method according to claim 1, further comprising a step of storing a flag to indicate whether data of an object is opaque or ordinary.

10. (Previously Presented) A method according to claim 9, further comprising a step of optimizing the compositing expression based on a value of the flag for contributing objects.

11. (Currently Amended) A method according to claim 1, wherein a wholly opaque object in one of the mutually exclusive regions acts to eliminate one or more objects within a corresponding one or more of the further mutually exclusive regions from the determination of pixel data in said determining step for the corresponding ~~a corresponding~~ one or more of the further mutually exclusive regions.

12. (Previously Presented) A method according to claim 1, wherein a wholly transparent object in one of the mutually exclusive regions eliminates at least itself from the determination of pixel data in said determining step for a corresponding one or more of the further mutually exclusive regions.

13. (Cancelled).

14. (Currently Amended) A method of generating a pixel image, the image being formed by rendering and compositing a plurality of graphical objects according to an expression tree representing a compositing expression for the image, the expression tree comprising a plurality of nodes each representing one of the objects or an operation for combining objects or results of other operations, each of the objects comprising a predetermined outline and one or more attributes associated therewith, said method comprising the steps of:

for at least one object node, forming one or more mutually exclusive regions substantially within the object represented by the node, one of the regions being defined by at least two region outlines substantially following at least part of the predetermined outline ~~outlines~~ of the object, each of the region outlines being formed from horizontal and vertical segments of a virtual grid encompassing a space in which the predetermined outlines are defined, two of the at least two region outlines for a particular object being arranged on either side of the predetermined outline for the particular object such that the object comprises at least two corresponding mutually exclusive regions, wherein the virtual grid comprises a plurality of cells, each cell comprising a plurality of pixels both horizontally and vertically there within, and wherein each of the mutually exclusive regions has one or more attributes associated therewith depending on the attributes associated with the object;

for at least one operation node, forming a plurality of further mutually exclusive regions, each of the further mutually exclusive regions being formed from the horizontal and vertical segments corresponding to the mutually exclusive regions of one or more object nodes associated with the operation node, each of the further mutually exclusive regions having one or more further attributes associated therewith, wherein the value of at least one of the further attributes is dependent on the values of the attributes associated with a plurality of the

mutually exclusive regions of the one or more object nodes, and wherein one or more of the attributes associated with the plurality of mutually exclusive regions is unused in determining the value of the at least one further attribute, thereby optimizing the determination of the at least one further attribute; and

for at least one of the further mutually exclusive regions, determining pixel data from the further attributes associated with the at least one further mutually exclusive region in order to generate the image.

15. (Currently Amended) A method according to claim 14, wherein the one or more attributes includes any one of color, opacity or object outline.

16. (Previously Presented) A method according to claim 14, wherein the virtual grid is regularly spaced.

17. (Currently Amended) A method according to claim 14, wherein the virtual grid is irregularly spaced ~~s spaced~~.

Claims 18 and 19 (cancelled).

20. (Previously Presented) A method according to claim 14, further comprising a step of storing a flag to indicate whether data of an object is opaque or ordinary.

21. (Previously Presented) A method according to claim 20, further comprising the step of optimizing the compositing expression based on a value of the flag for contributing objects.

22. (Previously Presented) A method according to claim 14, wherein a wholly opaque object in one of the mutually exclusive regions acts to eliminate one or more objects within a corresponding one or more of the further mutually exclusive regions from the determination of pixel data in said determining step for the corresponding ones of the further mutually exclusive regions.

23. (Previously Presented) A method according to claim 14, wherein a wholly transparent object in one of the mutually exclusive regions eliminates at least itself from the determination of pixel data in said determining step for a corresponding one or more of the further mutually exclusive regions.

Claim 24 (Cancelled).

25. (Currently Amended) An apparatus for generating a pixel image, the image being formed by rendering and compositing a plurality of graphical objects according to an expression tree representing a compositing expression for the image, the expression tree comprising a plurality of nodes each representing one of the objects or an operation for combining objects or results of other operations, each of the objects comprising a predetermined outline and one or more attributes associated therewith, said apparatus comprising:

mutually exclusive region forming means for forming one or more mutually exclusive regions for at least one object node, each of the mutually exclusive regions being defined by a region outline substantially following at least part of the predetermined outline ~~outlines~~ of the object, each of the region outlines being formed from horizontal and vertical segments of a virtual grid encompassing a space in which the predetermined outlines are defined, the virtual grid comprising a plurality of cells, each cell comprising a plurality of pixels both horizontally and vertically there within, wherein each of the mutually exclusive regions has one or more attributes associated therewith depending on the attributes associated with the object;

further region forming means for forming a plurality of further mutually exclusive regions for at least one operation node, each of the further mutually exclusive regions being formed from the horizontal and vertical segments corresponding to the mutually exclusive regions of one or more object nodes associated with the operation node, each of the further mutually exclusive regions having one or more further attributes associated therewith, wherein the value of at least one of the further attributes is dependent on the values of the attributes associated with a plurality of the mutually exclusive regions of the one or more object nodes, and wherein one or more of the attributes associated with the plurality of mutually exclusive regions is unused in determining the value of the at least one further attribute, thereby optimizing the determination of the at least one further attribute; and

generating means for determining pixel data from the further attributes associated with at least one further mutually exclusive region in order to generate the image.

26. (Previously Presented) An apparatus according to claim 25, wherein the one or more attributes is any one or more of color, opacity and object outline.

27. (Currently Amended) An apparatus according to claim 25, wherein said further region forming means applies set ~~sets~~ operations to the mutually exclusive regions.

28. (Previously Presented) An apparatus according to claim 27, wherein the set operations include difference and/or intersection operations.

29. (Previously Presented) An apparatus according to claim 25, wherein the virtual grid is regularly spaced.

30. (Previously Presented) An apparatus according to claim 25, wherein the virtual grid is irregularly spaced.

Claims 31 and 32 (cancelled).

33. (Previously Presented) An apparatus according to claim 25, further comprising means for storing a flag to indicate whether data of an object is opaque or ordinary.

34. (Previously Presented) An apparatus according to claim 33, further comprising means for optimizing the compositing expression based on a value of the flag for contributing objects.

35. (Previously Presented) An apparatus according to claim 25, wherein a wholly opaque object in one of the mutually exclusive regions acts to eliminate one or more

objects within a corresponding one or more of the further mutually exclusive regions from the determination of pixel data by said generating means for the corresponding ones of the further mutually exclusive regions.

36. (Previously Presented) An apparatus according to claim 25, wherein a wholly transparent object in one of the mutually exclusive regions eliminates at least itself from the determination of pixel data by said generating means for a corresponding one or more of said further mutually exclusive regions.

Claim 37 (cancelled).

38. (Currently Amended) An apparatus for generating a pixel image, the image being formed by rendering and compositing a plurality of graphical objects according to an expression tree representing a compositing expression for the image, the expression tree comprising a plurality of nodes each representing one of the objects or an operation for combining objects or results of other operations, each of the objects comprising a predetermined outline and one or more attributes associated therewith, said apparatus comprising:

mutually exclusive forming means for forming one or more mutually exclusive regions substantially within an object represented by at least one object node, one of the regions being defined by at least two region outlines substantially following at least part of the predetermined outline ~~outlines~~ of the object, each of the region outlines being formed from horizontal and vertical segments of a virtual grid encompassing a space in which the predetermined outlines are defined, two of the at least two region outlines for a particular object

being arranged on either side of the predetermined outline for the particular object such that the object comprises at least two corresponding mutually exclusive regions, wherein the virtual grid comprises a plurality of cells, each cell comprising a plurality of pixels both horizontally and vertically there within, and wherein each of the mutually exclusive regions has one or more attributes associated therewith depending on the attributes associated with the object;

further region forming means for forming a plurality of further mutually exclusive regions for at least one operation node, each of the further mutually exclusive regions being formed from the horizontal and vertical segments corresponding to the mutually exclusive regions of the one or more object nodes associated with the operation node, each of the further mutually exclusive regions having one or more further attributes associated therewith, wherein the value of at least one of the further attributes is dependent on the values of the attributes associated with a plurality of the mutually exclusive regions of the one or more object nodes, and wherein one or more of the attributes associated with the plurality of mutually exclusive regions is unused in determining the value of the at least one further attribute, thereby optimizing the determination of the at least one further attribute; and

generation means for determining pixel data from the further attributes associated with at least one of the further mutually exclusive regions in order to generate the image.

39. (Previously Presented) An apparatus according to claim 38, wherein the one or more attributes comprises any one or more of color, opacity and object outline.

40. (Previously Presented) An apparatus according to claim 38, wherein the virtual grid is regularly spaced.

41. (Previously Presented) An apparatus according to claim 38, wherein the virtual grid is irregularly spaced.

Claims 42 and 43 (cancelled).

44. (Previously Presented) An apparatus according to claim 38, further comprising means for storing a flag to indicate whether data of an object is opaque or ordinary.

45. (Previously Presented) An apparatus according to claim 44, further comprising means for optimizing the compositing expression based on a value of the flag for contributing objects.

46. (Previously Presented) An apparatus according to claim 38, wherein a wholly opaque object in one of the mutually exclusive regions acts to eliminate one or more objects within a corresponding one or more of the further mutually exclusive regions from the determination of pixel data by said generating means for the corresponding ones of the further mutually exclusive regions.

47. (Previously Presented) An apparatus according to claim 38, wherein a wholly transparent object in one of the mutually exclusive regions eliminates at least itself from

the determination of pixel data by said generating means for a corresponding one or more of the further mutually exclusive regions.

Claim 48 (Cancelled).

49. (Currently Amended) A computer program product including a computer readable medium having a plurality of software modules for generating a pixel image, the image being formed by rendering and compositing a plurality of graphical objects according to an expression tree representing a compositing expression for the image, the expression tree comprising a plurality of nodes each representing one of the objects or an operation for combining objects or results of other operations, each of the objects comprising a predetermined outline and one or more attributes associated therewith, said computer program product comprising:

a mutually exclusive region forming module for forming one or more mutually exclusive regions, each of the mutually exclusive regions being defined by a region outline substantially following at least part of the predetermined outline ~~outlines~~ of the object, each of the region outlines being formed from horizontal and vertical segments of a virtual grid encompassing a space in which the predetermined outlines are defined, the virtual grid comprising a plurality of cells, each cell comprising a plurality of pixels both horizontally and vertically there within, wherein each of the mutually exclusive regions has one or more attributes associated therewith depending on the attributes associated with the object;

a further region forming module for forming a plurality of further mutually exclusive regions for at least one operation node, each of the further mutually exclusive regions

being formed from the horizontal and vertical segments corresponding to the mutually exclusive regions of one or more object nodes associated with the operation node, each of the further mutually exclusive regions having one or more further attributes associated therewith, wherein the value of at least one of the further attributes is dependent on the values of the attributes associated with a plurality of the mutually exclusive regions of the one or more object nodes, and wherein one or more of the attributes associated with the plurality of mutually exclusive regions is unused in determining the value of the at least one further attribute, thereby optimizing the determination of the at least one further attribute; and

a generating module for determining pixel data from the further attributes associated with at least one further mutually exclusive region in order to generate the image.

50. (Previously Presented) A computer program product according to claim 49, wherein the one or more attributes is any one or more of color, opacity and object outline.

51. (Currently Amended): A computer program product according to claim 49, wherein said further region forming module applies set operations to the mutually exclusive regions.

52. (Previously Presented) A computer program product according to claim 51, wherein the set operations include difference and/or intersection operations.

53. (Previously Presented) A computer program product according to claim 49, wherein the virtual grid is regularly spaced.

54. (Previously Presented) A computer program product according to claim 49, wherein the virtual grid is irregularly spaced.

Claims 55 and 56 (Cancelled).

57. (Previously Presented) A computer program product according to claim 49, further comprising a storing module for storing a flag to indicate whether data of an object is opaque or ordinary.

58. (Previously Presented) A computer program product according to claim 57, further comprising a module for optimizing the compositing expression based on a value of the flag for contributing objects.

59. (Previously Presented) A computer program product according to claim 49, wherein a wholly opaque object in one of the mutually exclusive regions acts to eliminate one or more objects within a corresponding one or more of the further mutually exclusive regions from the determination of pixel data by said generating module for the corresponding ones of the further mutually exclusive regions.

60. (Previously Presented) A computer program product according to claim 49, wherein a wholly transparent object in one of the mutually exclusive regions eliminates at least itself from the determination of pixel data by said generating module for a corresponding one or more of the further mutually exclusive regions.

Claim 61 (cancelled).

62. (Currently Amended) A computer program product including a computer readable medium having a plurality of software modules for generating a pixel image, the image being formed by rendering and compositing a plurality of graphical objects according to an expression tree representing a compositing expression for the image, the expression tree comprising a plurality of nodes each node representing one of the objects or an operation for combining operations or results of other operations, each of the objects comprising a predetermined outline and one or more attributes associated therewith, said computer program product comprising:

a mutually exclusive forming module for forming one or more mutually exclusive regions substantially within an object represented by at least one object node, one of the regions being defined by at least two region outlines substantially following at least part of the predetermined outline ~~outlines~~ of the object, each of the region outlines being formed from horizontal and vertical segments of a virtual grid encompassing a space in which the predetermined outlines are defined, two of the at least two region outlines for a particular object being arranged on either side of the predetermined outline for the particular object such that the object comprises at least two corresponding mutually exclusive regions, wherein the virtual grid

comprises a plurality of cells, each cell comprising a plurality of pixels both horizontally and vertically there within, and wherein each of the mutually exclusive regions has one or more attributes associated therewith depending on the attributes associated with the object;

a further region forming module for forming a plurality of further mutually exclusive regions for at least one operation node, each of the further mutually exclusive regions being formed from the horizontal and vertical segments corresponding to the mutually exclusive regions of the one or more object nodes associated with the operation node, each of the further mutually exclusive regions having one or more further attributes associated therewith, wherein the value of at least one of the further attributes is dependent on the values of the attributes associated with a plurality of the mutually exclusive regions of the one or more object nodes, and wherein one or more of the attributes associated with the plurality of mutually exclusive regions is unused in determining the value of the at least one further attribute, thereby optimizing the determination of the at least one further attribute; and

a generation module for determining pixel data from the further attributes associated with at least one of the further mutually exclusive regions in order to generate the image .

63. (Currently Amended) A computer program product according to claim 62, wherein the one or more attributes comprises any one or more of color, opacity and object outline.

64. (Previously Presented) A computer program product according to claim 62, wherein the virtual grid is regularly spaced.

65. (Previously Presented) A computer program product according to claim 62, wherein the virtual grid is irregularly spaced.

Claims 66 and 67 (cancelled).

68. (Previously Presented) A computer program product according to claim 62, further comprising a storing module for storing a flag to indicate whether data of an object is opaque or ordinary.

69. (Previously Presented) A computer program product according to claim 68, further comprising a module for optimizing the compositing expression based on a value of the flag for contributing objects.

70. (Previously Presented) A computer program product according to claim 62, wherein a wholly opaque object in one of the mutually exclusive regions acts to eliminate one or more objects within a corresponding one or more of the further mutually exclusive regions from the determination of pixel data by said generation module for the corresponding ones of the further mutually exclusive regions.

71. (Previously Presented) A computer program product according to claim 62, wherein a wholly transparent object in one of the mutually exclusive regions eliminates at least itself from the determination of pixel data by said generation module for a corresponding one or more of the further mutually exclusive regions.

Claims 72-77 (cancelled).